App. Serial No.: 10/017,458
Atty. Docket No.: 0011-051

REMARKS

These remarks are in response to the Office Action dated June 19, 2003, which has a shortened statutory period for response set to expire September 19, 2003. No extension of time is required.

Claims

Claims 1-4, and 6-24 are pending in the above-identified application. Claims 14-22 are withdrawn by the Examiner pursuant to a restriction requirement. Claims 1-4, 6-13, and 23-24 are rejected over prior art. Claims 1, 2, and 4 are currently amended, and Claims 11 and 12 are canceled. Claims 3, 8-10, 13, 23, and 24 remain as filed. Reconsideration is requested.

Claim Objections

Claims 1-13

Claims 1-13 are objected to by the Examiner. The Examiner writes:

> "Claims 1-13 are objected to since, in claim 1, line 4 states "trimming a dummy fill pattern", yet one cannot actually trim the dummy fill pattern without having filled a dummy fill *area* with dummy fill *pattern*."

Applicant respectfully asserts that Claims 1-13 are directed to a method for creating a dummy fill pattern and not for manufacturing a wafer or the like. Those skilled in the art will recognize that such patterns can be embodied in, for example, a photo-mask used to manufacture devices, as well as in the manufactured devices. Thus, according to Claim 1, the dummy metal fill pattern is trimmed and then combined with the pattern for the functional circuitry to create "a dummy metal fill pattern near functional circuitry," as recited in Claim 1.

For the foregoing reasons, Applicant respectfully requests reconsideration and withdrawal of the objection to Claim 1.

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Claims 6 and 7

Claims 6 and 7 are objected to by the Examiner. The Examiner writes:

> "Claims 6 and 7 are objected to since there is antecedent dependency on a structural limitation in claim 1, namely the "alternative functional circuitry" in line 2 now being *selected*, should have been *selected* in claim 1."

As suggested by the Examiner, Claim 1 is amended herein to now recite "selecting a dummy metal fill pattern of alternative functional circuitry," thereby providing antecedent basis for the selection process described in Claims 6 and 7. Applicant appreciates the Examiner's suggestion, and respectfully requests reconsideration and withdrawal of the objections to Claims 6 and 7 in view of the amendment.

Rejections Under 35 U.S.C. § 112

Claims 1-13 are rejected under 35 U.S.C. § 112, second paragraph. The Examiner writes:

> "Claims 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 8-10 recite the limitation "dummy **metal** fill pattern" in line 2. There is insufficient antecedent basis for this limitation in the claim. There is no mention of the dummy **metal** fill pattern in Claim 1.
>
> Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: in claim 1, *selecting* a dummy fill pattern. Explanation: since lines 5-6 read "and wherein the dummy fill pattern is an example of an alternative functional circuitry", it is an obvious necessity that a method step be executed first in order to establish the dummy pattern as it stated. It is suggested that claim 1 steps include such instruction definitely, for example, replace line 6 with: --*selecting* a dummy fill pattern of alternative functional circuitry.—(notice that it is stated like this in claim 12)Therefore:
>
> Claim 12 fails to further limit claim 1 that must have already made the selection to establish it as *wherein*.(at present, one must execute claim 12 in order to establish the claim 1, line 6, result.)"

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Claims 8-10:

Claims 8-10 are rejected under 35 U.S.C. § 112, second paragraph. The Examiner writes:

> "Claims 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 8-10 recite the limitation "dummy **metal** fill pattern" in line 2. There is insufficient antecedent basis for this limitation in the claim. There is no mention of the dummy **metal** fill pattern in Claim 1.

Claim 1 is amended herein to now recite the step of "selecting a dummy metal fill pattern of alternative functional circuitry," which provides antecedent basis for the term "dummy metal fill pattern" recited in Claims 8-10. Additionally, other occurrences of the term "dummy fill pattern" have been amended to "dummy metal fill pattern" for consistency. Applicant respectfully requests reconsideration and withdrawal of the rejections of Claims 8-10 under 35 U.S.C. § 112, second paragraph, in view of the amendments made herein.

Claims 1-13

As indicated above, Claim 1 is amended herein as suggested by the Examiner, and now includes the limitation of "selecting a dummy metal fill pattern of alternative functional circuitry." Applicant appreciates the Examiner's suggestion of alternate claim language, as opposed to a bare rejection the claims.

Claim 12 is canceled, thus obviating the rejection of that Claim.

For the above reasons Applicant requests reconsideration and withdrawal of all rejections under 35 U.S.C. § 112.

Rejections Under 35 U.S.C. § 102

Claims 1-4 and 11-13 are rejected under 35 U.S.C. § 102 (b) as being anticipated by Motoyama (USPN 6,099,992). The Examiner writes (in part):

> Motoyama et al. teach margin area W, between active circuitry 21 and dummy region 22 in Fig. 5A, as described in lines 26-27 column 7; Motoyama et. al. add dummy pattern as a square repeating pattern that ends at the width W, of the margin, is thus

> trimmed at that location, results in the gap between area 22 and 21; with final overlay as shown in Fig. 5E.
>
> Examiner disregards the limitation: "and wherein the dummy fill pattern is an example of an alternative functional circuitry" (per item 4 above) as a method limitation, being addressed, rather, in claim 12 rejection, where it has been expressed as an explicit method step.
>
> ...
>
> Regarding claim 12, Motoyama et. al. teach of a selected fill metal pattern of square lattice, a square being alternative to the metal lines and rectangular areas depicted as '21' in Fig. 5A."

Applicant respectfully traverses.

Applicant acknowledges the Examiner's statement that the limitation "and wherein the dummy fill pattern is an example of alternative functional circuitry" was disregarded in making the rejections under 35 U.S.C. §102(b). As amended herein, the limitation is explicitly recited as a method step, and may therefore obviate the rejection under 35 U.S.C. §102(b). However, Applicant provides the following traversal of the rejections for the sake of completeness.

The standard for anticipation is set forth in M.P.E.P. § 2131 as follows:

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

As amended herein, Claim 1 recites: (emphasis added)

> 1. A method for creating a dummy metal fill pattern near functional circuitry, comprising:
>
> creating a margin area around the functional circuitry;
>
> selecting a dummy metal fill pattern **of alternative functional circuitry;**
>
> trimming the dummy metal fill pattern to the margin area to create a trimmed fill pattern; and
>
> overlaying said trimmed fill pattern and the functional circuitry.

Motoyama et al. do not teach or suggest the step of "selecting a dummy metal fill pattern of alternative **functional circuitry**," as recited by amended Claim 1 (emphasis added). Rather, Motoyama et al. teach filling an area with sections of dummy fill, and then using a lattice to break up the fill pattern into square segments. Creating a regular pattern of square dummy fill areas is consistent with the methods employed by the prior art, as discussed in the background section of Applicant's disclosure. In contrast, according to the present invention a dummy metal fill pattern of functional circuitry of a metal layer is used. Therefore, because Motoyama et al. does not disclose all of the limitations of Claim 1, it does not anticipate Claim 1.

Claims 2-4, 6-10, and 13 depend either directly or indirectly from Claim 1 and are therefore distinguished from the cited prior art for at least the reasons provided above with respect to Claim 1.

For the above reasons Applicant requests reconsideration and withdrawal of the rejections under 35 U.S.C. § 102.

Rejections Under 35 U.S.C. § 103

Claims 23 and 24 are rejected under 35 U.S.C. § 103 as being unpatentable over Motoyama et. al.. The Examiner writes:

> "Motoyama et. al. selects and fills pattern square lattice, discussed above. Motoyama et. al. fail to teach the array. Motoyama et. al. teach of a circuit pattern line 33, column 1. The problem that the common knowledge in the art was concerned with was also known in the art of Motoyama et. al. since LCOS array is circuitry having undulations. It was commonly known to those of ordinary skill in the art that the LCOS array would benefit from the dummy circuitry for the purpose of leveling the layers and helping reduce microloading. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate this common knowledge of applying the method for this purpose to an array, as discussed above.
>
> Regarding claim 23, Motoyama et. al. teach the square lattice having partially filled areas i.e. the lattice surrounding is unfilled."

Applicant respectfully traverses.

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M.P.E.P. §2143 sets forth the requirements of a *prima facie* case of obviousness:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

As originally filed, Claim 23 recites: (emphasis added)

> 23. A method for providing dummy fill in a LCOS array, comprising:
> selecting a metal fill pattern **from functional circuitry on a layer of the array**; and
> filling an unfilled area with the metal fill pattern.

The cited reference, does not teach or suggest the step of "selecting a metal fill pattern from functional circuitry on a layer of the array," as recited by Claim 23. In addition, Motoyama et. al. provide no suggestion or motivation for performing such a step.

With respect to the background section at column 1, line 33, Motoyama et al. do not teach the step of "selecting a metal fill pattern from functional circuitry." Rather, it discusses how fine circuits of semiconductor IC devices are created, and **not** the step of selecting a metal fill pattern based on those functional circuits.

Therefore, because Motoyama et al. do not teach or suggest all of the steps of Claim 23, nor do they provide a motivation for performing all of those steps, the reference cannot establish a prima facie case of obviousness with respect to Claim 23.

Claim 24 depends directly from Claim 23 and is distinguished from the cited prior art for at least the reasons provided above with respect to Claim 23.

For the above reasons Applicant requests reconsideration and withdrawal of the rejections under 35 U.S.C. § 103.

Additional Comments

Claim 2

Claim 2 is amended herein for clarity and consistency with amended base Claim 1.

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Claims 11 and 12

Claims 11 and 12 are canceled, because they are redundant in light of the amendments made above to Claim 1.

Conclusion

For the foregoing reasons, Applicant believes Claims 1-4, 6-10, 13, and 23-24 are in condition for allowance. Should the Examiner undertake any action other than allowance of Claims 1-4, 6-10, 13, and 23-24, or if the Examiner has any questions or suggestions for expediting the prosecution of this application, the Examiner is requested to contact Applicant's attorney at (269) 279-8820.

Respectfully submitted,

Date: 10/3/03

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CERTIFICATE OF FACSIMILE TRANSMISSION (37 CFR 1.8(a))

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being transmitted via facsimile, on the date shown below, to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA, 22313-1450, at 703-746-6818.

Date: 10/3/03

Larry E. Henneman, Jr.